REMARKS

Favorable reconsideration of this application as presently amended and in light of the following discussion is respectfully requested.

Claims 1-9 and 12-23 are presently active in this case, Claims 3 and 7 having been amended by way of the present Amendment.

The Official Action indicates on page 5 that Claims 3-9 and 13-23 are allowed. However, page 1 of the Official Action indicates that Claims 3, 4, 7, and 8 are allowed and Claims 5, 6, 9, and 13-23 are objected to, with no indication as to any objection to these claims. The Applicants note that only Claims 1, 2, and 12 were rejected in the outstanding Official Action, and therefore Claims 5, 9, and 13-23 should be allowed in their present form. Additionally, Claims 3 and 7 have been rewritten in independent form, thereby placing Claim 3, as well as Claims 4 and 6 that depend therefrom, and Claim 7, as well as Claim 8 that depends therefrom, into condition for allowance. The Applicants respectfully request entry of the amendments to Claims 3 and 7, since these amendments clearly place Claims 3, 4, and 6-8 into condition for allowance.

In the outstanding Official Action, Claims 1 and 12 were rejected under 35 U.S.C. 102(b) as being anticipated by Imai et al. (JP 05-167143A). Additionally, Claims 2 was rejected under 35 U.S.C. 103(a) as being unpatentable over Imai et al. For the reasons discussed below, the Applicants traverse these art rejections.

Claim 1 of the present application advantageously recites an optical transmission system comprising a light source configured to produce an optical signal. The light source comprises a plurality of densely placed laser diode modules, where each of the plurality of densely placed laser diode modules has an output of at least 100 mW.

Claim 2 of the present application advantageously recites an optical transmission system comprising a light source configured to produce an optical signal. The light source

comprises at least one laser diode module including a metal substrate mounting a laser diode chip and an optical component, and a peltier device thermally connected with the metal substrate. The light source further comprises a heat pipe having a heat absorbing portion and a heat radiating portion, where the heat absorbing portion of the heat pipe is thermally connected with the peltier device.

Claim 12 of the present application advantageously recites an optical transmission system comprising a Raman amplifier comprising a light source configured to produce an optical signal. The light source includes a plurality of densely placed laser diode modules, where each of the plurality of densely placed laser diode modules has an output of at least 100 mW.

The Applicants submit that the inventions recited in Claims 1, 2, and 12 of the present application are not disclosed or suggested by the Imai et al. reference. More specifically, Claims 1, 2, and 12 recite optical transmission systems including a light source configured to produce an optical signal. The Applicants note that the language in Claim 1, 2, and 12 regarding "a light source configured to produce an optical signal" (emphasis added) is in the body of the claims and not in the preamble, and the Imai et al. reference does not disclose or suggest such an optical signal, nor does the Official Action cite a portion of the Imai et al. reference for such a teaching. The Imai et al. reference describes array semiconductor laser equipment, which is used, for example, in cutting, machine work, machining, etc. and does not produce *an optical signal*, especially in the sense of an optical transmission system, as recited in Claims 1, 2, and 12. The Imai et al. reference describes equipment that is in a field of technology that is distinct in both purpose and design from that of the present invention.

While high-power semiconductor laser equipment is known in the art, the Applicants submit that it was not known at the time of the present invention to include laser diode modules having an output of at least 100 mW in optical transmission systems having a light

source configured to produce an optical signal. In general, the power output for a machine processing laser device is large, however, the power output of a light source in optical transmission systems is much smaller due to size restraints on such devices and the need to control a temperature in the system. In machine processing laser devices, such problems are not of concern due to the general lack of size restraints, and therefore such laser devices are non-analogous to the present invention and do not anticipate the present invention.

Accordingly, the Applicants respectfully request the reconsideration and withdrawal of the art rejections of Claims 1, 2, and 12.

Consequently, in view of the above discussion, it is respectfully submitted that the present application is in condition for formal allowance and an early and favorable reconsideration of this application is therefore requested.

Respectfully submitted,

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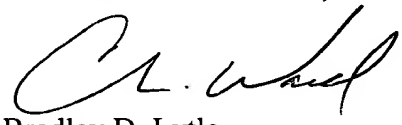

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IN THE CLAIMS

3. (Twice Amended) [The optical transmission system according to Claim 2, further comprising] An optical transmission system comprising a light source configured to produce an optical signal, said light source comprising:

at least one laser diode module including a metal substrate mounting a laser diode chip and an optical component, and a peltier device thermally connected with said metal substrate;

a heat pipe having a heat absorbing portion and a heat radiating portion, said heat absorbing portion of said heat pipe being thermally connected with said peltier device; and

a plurality of laser diode modules each including a metal substrate mounting a laser diode chip and an optical component, and a peltier device thermally connected with said metal substrate.

7. (Twice Amended) [The] An optical transmission system [according to Claim 2] comprising a light source configured to produce an optical signal, said light source comprising:

at least one laser diode module including a metal substrate mounting a laser diode chip and an optical component, and a peltier device thermally connected with said metal substrate; and

a heat pipe having a heat absorbing portion and a heat radiating portion, said heat absorbing portion of said heat pipe being thermally connected with said peltier device,

wherein said heat pipe is cylindrical in shape.